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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/690,833	10/22/2003	Paul E. Denney	LOMASR.023A	5409

20995 7590 06/28/2006

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EXAMINER
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ELVE, MARIA ALEXANDRA

ART UNIT	PAPER NUMBER
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1725

DATE MAILED: 06/28/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 10/690,833	<b>Applicant(s)</b> DENNEY ET AL.	
	<b>Examiner</b> M. Alexandra Elve	<b>Art Unit</b> 1725	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 15 June 2006.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-22 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-22 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 22 October 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
     Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
     Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Uraki et al. (USPN 5,977,515) in view of Otsubo et al. (USPN 6,507,000) and Freiwald (USPN 6,693,255).

Uraki et al. discloses an underwater laser-processing chamber 38 (housing). The laser (6) is contained within the chamber, which contains a mirror (40) and a lens (7). Although there are partitions to negate contamination of the laser machining area there are no means of removing the debris.

Otsubo et al. discloses a dust collector for a laser-drilling machine. The containment collector is placed between the lens table (1) of the laser and the workpiece (4). Machining debris is collected in the containment area (B) and then swept out through (7a). It would have been obvious to one of ordinary skill in the art at the time of the invention to use a containment collector as taught by Otsubo et al. in the Uraki et al. system because the debris can be removed from the work or machining zone and hence yielding an optimal product. Otsubo et al. does not teach cooling of the containment collector.

Freiwald et al. discloses a system for laser ablation and cleaning. Material and vapor ablated from the workpiece 15 is removed from the vicinity of the cleaning head 20 by means of a powered vacuum and filtration unit 40. The vacuum unit is equipped with a conventional blower to create reverse pressure in the flex vacuum hose 42. Flex vacuum hose is in fluid communication between the vacuum filtration unit and the cleaning head, so that ablated particulates and vapors are sucked from the head to the unit, where filtration of the air stream is accomplished. The cleaning head must permit some ambient air to enter the nozzle, in order to cool the ablated material and dilute and entrain the ablated material for easier filtration. In addition for high-powered lasers water-cooling may be used. (abstract, cols. 5-6)

It would have been obvious to one of ordinary skill in the art at the time of the invention to use air cooling or water cooling as taught by Freiwald et al. in the Otsubo et al. and Uraki et al. system because cooling of the machining debris negates contamination effects on the optics and potential redeposition of debris on the workpiece surface.

### ***Response to Amendment***

The amendment filed 6/15/06 is objected to under 35 U.S.C. 132(a) because it introduces new matter into the disclosure. 35 U.S.C. 132(a) states that no amendment shall introduce new matter into the disclosure of the invention. The added material

which is not supported by the original disclosure is as follows: "cooling conduit" and "cooling conduit fluidly coupled".

Applicant is required to cancel the new matter in the reply to this Office Action.

### ***Response to Arguments***

Applicant's arguments filed 6/15/06 have been fully considered but they are not persuasive. Applicant arguments are with respect to the new amendments. In view of the new matter rejections the arguments are moot.

Applicant argues that there is no motivation to combine the references. In response to applicant's argument that there is no suggestion to combine the references, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, all references are directed to laser machining, containment and contamination issues. Furthermore, references do not need to be physically combinable. *In re Nievelt* 179 USPQ 224 (CCPA 1973).

**Conclusion**

Any inquiry concerning this communication or earlier communications from the examiner should be directed to M. Alexandra Elve whose telephone number is 571-272-1173. The examiner can normally be reached on 6:30-3:00 Monday to Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick J. Ryan can be reached on 571-272-1292. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

June 24, 2006.



M. Alexandra Elve  
Primary Examiner 1725